

AMENDMENTS TO THE CLAIMS

The following Listing of Claims replaces all prior versions and listings of claims in this application. Please cancel claims 7, 11, 12, 14, and 17-20 without prejudice or disclaimer.

Listing of Claims:

1. (Currently Amended) A process for producing foam beads from thermoplastic polymers, encompassing the stages of

- a) addition of a blowing agent to a thermoplastic polymer melt,
- b) cooling and extrusion, through a die, of the thermoplastic polymer melt

comprising blowing agent,

c) cutting of the thermoplastic polymer melt comprising blowing agent downstream of the die at reduced pressure with foaming to give foam beads,

which comprises using a blowing agent in which water and a solubilizer are present, wherein the foam beads have a bulk density in the range from 15 to 25 kg/m³ and wherein the solubilizer used comprises an aliphatic alcohol, ketone, ether, or ester and wherein the blowing agent used comprises a mixture of

from 0.1 to 3% by weight of water,

from 0.1 to 3% by weight of an aliphatic alcohol, ketone, ether, or ester, and

from 1 to 10% by weight of an aliphatic, halogenated, or halogen-free hydrocarbon, N₂,

or CO₂ based on the thermoplastic ~~polymer-polymer~~,

wherein the thermoplastic polymer has a bi- or multimodal molecular weight distribution, and the thermoplastic polymer comprises a polymer with a molar mass M_w in the range from 150,000 to 250,000 g/mol and a polymer with a molar mass in the range from 280,000 to 500,000 g/mol.

2. (Canceled)

3. (Previously Presented) A process as claimed in claim 1, further comprising an adsorbent wherein the absorbent used comprises aluminum hydroxide, phyllosilicate, or zeolite.
4. (Previously Presented) A process as claimed in claim 1, wherein the blowing agent also comprises CO₂, N₂, or an aliphatic, halogenated, or halogen-free hydrocarbon.
5. (Canceled)
6. (Previously Presented) A process as claimed in claim 1, wherein the thermoplastic polymer used comprises polystyrene, styrene copolymers, polyethylene, polypropylene, or a mixture of these.
7. (Canceled)
8. (Previously Presented) A process as claimed in claim 1, wherein the thermoplastic polymer used comprises polystyrene with a polydispersity M_w/M_n of at least 2.5.
9. (Previously Presented) A process as claimed in claim 1, wherein, prior to or after addition of the blowing agent, an IR absorber is added to the thermoplastic polymer melt.
10. (Original) A process as claimed in claim 9, wherein the IR absorber used comprises from 0.1 to 2.5% by weight based on the thermoplastic polymer melt, of graphite, carbon black, or aluminum powder.
- 11-12. (Canceled)
13. (Previously Presented) A process as claimed in claim 3, wherein the blowing agent also comprises CO₂, N₂, or an aliphatic, halogenated, or halogen-free hydrocarbon.
14. (Canceled)
15. (Previously Presented) A process as claimed in claim 3, wherein the thermoplastic polymer used comprises polystyrene, styrene copolymers, polyethylene, polypropylene, or a mixture of these.

16. (Previously Presented) A process as claimed in claim 4, wherein the thermoplastic polymer used comprises polystyrene, styrene copolymers, polyethylene, polypropylene, or a mixture of these.
- 17-22. (Canceled)